Disability Visibility Podcast

Episode 28: Disabled People in STEM

Guest: Jennison Asuncion, Liz Henry, and Josh Miele

Host: Alice Wong

Transcript by Cheryl Green

For more information: https://disabilityvisibilityproject.com/podcast/

Introduction

[hip-hop]

LATEEF MCLEOD: This is the Disability Visibility Podcast with your host, Alice Wong.

ALICE WONG: Hello, my friend! Welcome to the Disability Visibility Podcast, conversations on disability politics, culture, and media. I'm your host, Alice Wong. Today's episode is about disabled people in STEM. STEM stands for science, technology, engineering and mathematics.

Last year, I moderated a panel at the headquarters of Pandora on this topic to mark the International Day of Persons with Disabilities on November 28, 2017. You're gonna hear some parts from the panel discussion featuring Liz Henry, Jennison Asuncion, and Josh Miele. They will talk about how they got into tech, their STEM educational experiences, and the ways the tech community improve their recruitment and retention of disabled people. And a special thank you to Henry Lu of Pandora for hosting us. Are you ready? Away we go!

[electronic beeping]

ELECTRONIC VOICE: 5, 4, 3, 2, 1!

Introduction to the panel

[laid back electro-pop]

ALICE: Hey, everyone. I wish I could be there with you. My wheelchair's a little bit on the fritz, and I decided it's not very safe to be on BART just in case something happens. So, thank you to the Internet and platforms like Zoom, and I can be here with you all today.

So, I wanna thank Henry. I met Henry last year at one of the first in-person events that the Disability Visibility Project organized, and it was all about disabled characters in comic books. And I'm really deli ghted to be here today to talk about tech and people with disabilities in tech.

I just wanna say that this is a all-star panel of people with disabilities in tech: Liz Henry, Josh Miele Jennison Asuncion. So, without further ado, let's just get started.

JENNISON ASUNCION: Hey, good afternoon everyone. My name is Jennison Asuncion. I am an Engineering Manager at LinkedIn responsible for accessibility, and I am the Canadian among you! [chuckles] I came into tech through a non-traditional means. My Bachelor's degree is actually in Political Science, and I have a Master's in Educational Technology.

JOSH MIELE: Well, my name is Josh Miele. I'm currently a scientist at The Smith-Kettlewell Eye Research Institute. I've been there for almost 20 years. So, the research I do actually, is R and D on accessible technology for blind people. I'm blind, and I'm very heavily active in the blind and, more generally, the pan-disability community that's very rich here in the Bay Area. I've got a really strong connection to accessibility and Universal Design in general. I studied Physics as an undergrad at Berkeley, and I wanted to— Go Bears!

LIZ HENRY: [chuckles]

JOSH: Although I might be the only person who attended both undergraduate and grad school at Berkeley and still has never been to a football game. I got my Bachelor's in Physics, and while I was there, I started working at a small software company called Berkeley Systems. We got started building accessible technology. I did get a PhD in Psychoacoustics, how hearing works and how we know what we hear and how we parse out the things that we wanna hear from the things that we aren't interested in. I use that as a way of designing non-visual interfaces to information systems. Basically, what I do now is I design tools that blind people can use to get better access to the information they need in order to do the things they want to do.

LIZ: Yeah. I have no technical background really, either. [chuckling] So, Jennison, I'm with you there. Yeah, I also didn't grow up with a disability. I sort of started using a wheelchair in my early 20s. I went to school in Poetry, and I'm a literary translator on the side. Actually, you can get my latest book, which is a book called *My Lai*. And I translated it from Spanish. It's a book of poetry by by Carmen Berenguer.

But what I do in tech is I work at—I guess I worked in the industry since the early '90s on and off—and currently, I worked at Mozilla for the last five years. So, I'm the Release Manager for Firefox.

Getting into tech and barriers and accommodations in education and training

[bubbly electronica]

ALICE: What led to your career in tech, and can you tell us a little bit about your training and educational experiences in STEM and whether you encountered any barriers and any accommodations that you might've used?

JENNISON: I'll start, if that's cool. So, while I did finish up with a Bachelor's in Politics and a Master's in Educational Technology, I did do two stints in Computer Science: one in university and one at community college. Because I thought that programming was where I was headed. But because of some previous experiences, I struggled with math.

I think my biggest challenge was getting the profs to read—and I'm gonna age myself here—but read stuff off the chalkboard while they were writing or off of the overheads and stuff. I'd have a prof say an equation and then spent like a minute writing all the steps on the board and going, "And that's how you get the answer!" So, how I learned to work with that was finding out as best I could who my teachers were ahead of time. And I had this generic letter, which I'd obviously personalize a little bit, just letting them know that I was totally blind, that I'd be there taking my own notes, etc., etc. But I'd like to meet with you ahead of time to just answer any questions. Nine times out of ten, the teachers would take me up on that offer. Then I would just talk to them and explain what I would need. That training that I got there would see me well through my different careers that I've had, starting as an E-learning Designer with IBM, a Project Manager for tech projects at the Bank of Montreal, and then working in accessibility at another bank in Canada, Royal Bank.

My other big impediment was just getting material on time. You had 15 weeks, and sometimes 22 chapters of books to get there. And if you're only getting the first couple of chapters, like third week in, you're in trouble. Back then—this was in the '90s—things took longer to put together. Braille books, especially with diagrams took that much longer. And that's par for the course, I think, when you go to a large university where there's a lot of different people with different disabilities and a small center with a small staff.

Sometimes there would be barriers: People from other countries where people who are blind may not have achieved a level of education that I had, per se, like going to university. So, I could tell that some professors were just uncomfortable, and there was nothing really I could do about that except to try and ease their discomfort by keeping good humor and things like that. But I did have some teachers who were pretty blunt saying—it was probably not legal for them to say this, but—just saying stuff like, "It's gonna be really difficult for you in this class. Are you sure you wanna take it?" and things like that. But all of that stuff that I experienced in university, in college was good preparation for just things I would have to make sure I was prepared for in general when I moved into the world of work.

JOSH: Disability is as diverse as the people who are involved. And so, there's no one size to it. But one thing that I think you really can say in general about disability, is that having a disability is, to a greater or lesser extent, a big pain in the ass. You have to basically manage logistics around what are, for most people, very simple operations. And then you also have to manage people's perceptions of you, like Jennison was pointing out. So, in many ways, you're dealing with a double problem: It's a perceptual problem of others, how others perceive your abilities, and it's a problem of logistics, of getting access to the things you need in order to do what you wanna do. And the number of people with disabilities represented in STEM fields are way lower than any of the other under-represented groups you hear about: Women, minorities. It's because of this double problem.

There's some situations where you get accommodations such as, when I was taking my semi-conductors class, where you have to go into a lab class and build electronics on bread boards. So, the professor was like, "Well, we can just waive this for you." I'm sure that there were many people who'd been like, "Hell, yeah!" [laughs] But I know that if I waived that, I wouldn't know any of that stuff.

It is because people with disabilities are under-represented in the tech field that we still haven't established a firm culture of accessibility. If there were more of us among the people designing the interfaces and the tools of the future, the accessibility barriers would be run into earlier and would be more real to the people doing the development than it currently is. And that's the world I'm headed for.

ALICE: Thanks, Josh. I'll bet you anything there are a lot of people in the tech industry that are disabled but don't disclose because the culture, and they're just not either at a place where they feel like they can come out or that they wanna disclose. I mean, let's think about it. There's one in five Americans with some kind of disability. Everybody knows somebody with a disability, and that has to be also part of every workplace. So, I think there's a lot of different forces that are the reasons why we're so under-represented.

So, Liz, do you wanna talk a little bit about what led you to a career in tech?

LIZ: Sure, and I did actually think, oh, wait. I took some tech classes at De Anza College when I was first using a wheelchair in the, I guess, early-mid '90s. And I sort of ran into a disabled students' union there, and that was like completely transformative for me and incredibly helpful.

I was just actually wondering—not to hijack your moderator role—but Josh, I was wondering if you knew other, were you in contact with the other kind of cross-disability community at Berkeley?

JOSH: Yeah, definitely. And it was the first disability community I had ever connected with in my life. I was mainstreamed, which basically means that I was the only blind kid in my school. And I spent my entire life minimizing my differences and trying to go along to get along, basically, trying to pass. My experience coming to Berkeley was the first time I met a large community of people with all sorts of disabilities who were cool! Having a community of lovable, respectable, and flawed people with disabilities was a huge part of my ability to succeed at Berkeley, just knowing that I was in a community of people who were working together and supporting each other and who had a history of mutual support leading to success.

JENNISON: I would just add, for me, again, I was mainstreamed through elementary and through high school. And then, when I came to community college—because where I'm from in Canada, you have to go to college before you go to university—it was there that I was exposed to people with a variety of other different disabilities and impairments. And I took the opportunity to get involved in disability student politics in Canada. There is a cross-disability student organization in Canada representing all the provinces and territories. So, I got very involved with that, and I definitely credit my involvement there. The networking and leadership and becoming visible through there certainly opened doors, for sure.

ALICE: Great. Thank you so much.

LIZ: I didn't answer your actual question.

ALICE: Yeah, please do, Liz!

LIZ: [laughs] I can be brief. But I just really liked computers and programming from a young age and always was kinda the person around who could fix the gadget or mess with technical things even with no background. And then, I was really into teaching myself Unix and hacking type things and games. So, I think I came into it from amateur stuff and games and then did a bit of technical writing. And really, I spent a lot of the '90s doing kinda odd jobs on and off and being off work completely on disability for several years. But then, when the Web took off, I learned a lotta things just from partners and friends, mostly, like boyfriends or girlfriends. And it was so easy to get into doing web development then because nobody knew how to do it. You could be a little kid and just make $300 an hour. It was crazy. [chuckles] So, that's how I got into it, and I got full-time work. I did a lot of tech support in web dev and then went more into working as a programmer in various universities. And then, open source was a big pull for me because it was philosophically so attuned with what I believed in.

ALICE: Thanks, Liz.

[bubbly electronica]

The importance of these conversations, including disability in diversity, and information

JENNISON: There needs to be a lot more of this. As people are doing these diversity conversations, someone needs to always be asking the question: "Where's the voice of a person with disability?" There's diversity within disability too, as there would be in other groups. But so, part of it is that. I think on the job side, there needs to be a lot more work done with recruiters who are used to just piling through resumes, hundreds of resumes. Now, I'm definitely not saying hire them even though they don't have the right qualifications. But if they do have, for

example, gaps in their jobs, or if they've been at the same place for a long time, or if this is their first job that they're applying to, but they've got a PhD in Comp Sci or Design or something like that, that there needs to be some affordances there. So, there's that on the work front.

And then on the school front, I still think we still have a long way to go to change attitudes of not only professors and teachers in the high school and elementary, but the professionals who work with people with disabilities, the itinerant teachers and others who also bring in their attitudes. One of the reasons why math was always scary to me is because I had someone who was supposed to be helping me with math in high school who spent time telling me, "You know, you should just work hard enough to pass, and that's it." And when you get that kinda messaging in high school, which is formative years for all of us, it's kind of hard to break that hearing that voice in your head a little bit. Yeah, and then of course, there's the other stuff about just making sure the technology, the tools of the trade, are accessible. And I could go on, but I'm gonna stop.

LIZ: I have some thoughts specifically about information, providing good information about accessibility and the importance there. You were talking about recruiters, but even in a job description or in a recruiting page, tech companies could make it clear not just by kind of having a laundry list of protected classes they will consider [laughs] hiring. But they could provide information about physical access to an office or a location or an event. They could provide a huge range of possible access information. I'm thinking of some events and conferences that are doing it really well: Alter Conf is one that has just done a great job. They email, and they're like, "Tell us how we can meet your accessibility needs if you have any particular needs." And they provide information like, "We're going to have professional sign language interpreters. We're going to have transcription for all the talks available." And one area I think that companies are doing pretty well, because it's such a broad situation a lot of people find themselves in, where they don't identify as disabled, but they have specific food needs or allergies. So, I see this happening a lot at events or at various companies where they'll label the food ingredients. Instead of just going, "Here's a vegetarian thing," they'll list all the ingredients. And that's the kind of information, like the granularity of information, that I want across all kinds of different axes of possible accessibility. That's just a Universal Design type of principle. You're never going to hit every possible thing, but you can provide as much as information and let people make good decisions.

ALICE: Great.

JOSH: Twenty years ago, we wouldn't have been here talking about this. We're moving in the right direction, I think. Disability itself is becoming much more acceptable. There's less, still plenty there, but there's less shame and embarrassment around disability than there ever has been before. So, that's cool, but we also still have a long way to go in developing what I would call a culture of accessibility. Not just disability awareness but an understanding of what accessibility is. And Jennison mentioned a number of important areas. One is the way we teach engineers and designers is really completely devoid of anything about accessibility. If you're taking an Engineering or a Design major, you may have one semester that deals with some aspects of accessibility, if you're lucky; you also may not. And it may just be mentioned, and chances are, if it is mentioned, it's mentioned in the context of legal requirements and standards and compliance. I think that that's not helping us. One of the things that I think we really need to do is provide an understanding among people who are studying Computer Science and Design and Engineering, we need to teach about accessibility in the same context that we teach about disability and inclusion and social justice. And we need to develop an understanding early on

about accessibility as part of what we do in order to make our entire society and the tools that our society uses better.

The more people we have that understand what disability is and how accessibility and disability connect with one another, the better off we're gonna be. And having somebody there at the very beginning who's not necessarily an accessibility expert but who has the expertise to know a little something about what questions to ask and what decisions will lead to better outcomes, that's much better than having all of your accessibility people sort of compartmentalized off into one group in charge of putting out fires that everybody else is setting.

LIZ: You just mentioned the things I think of as three different strategies for inclusion, for different disability things. And one is the civil, human rights argument. Like, this is just. And then there's sort of a pragmatic, you will get a better thing. Your curb cuts will help people with bicycles too; it'll help a broader category of people. Which is always a bit insulting for me. [laughs] It's like oh, I don't matter until 12 other people get helped? But it is pragmatic, and it does work. And then you're third one is sort of like from a perspective, being included broadly and not in a little box of accessibility reporting. You make a better thing. You come out with a different perspective.

JENNISON: I wanted to quickly share a workplace story that happened to me at LinkedIn when I arrived for orientation class. I quickly learned that there was someone in that orientation class who was a wheelchair user. That was the first time that that had ever happened to me, that I've been in that type of a situation: First day where there was someone else with a disability there. And we kind of had this moment where we came over to each other and started to say, "Hey!" And it was just one of those things. I think that probably happens with other minorities or people with diverse groups. If they find out in that type of a situation there's kind of that knowingness or at least that, "Hey! That's really neat to see you there." I know that that will be something that I will carry with me wherever I go to next. I wish it would happen more.

[laidback electro-pop]

Advice for employers on workplace culture and embracing people with disabilities

ALICE: I think you all shared a lot in terms of recommendations, but is there anything else in terms of advice for employers in terms of workplace culture, ways to really embrace people with disabilities so that they do feel welcome, and they do feel seen and heard?

JENNISON: I think the one thing that's often forgotten about is the social activities, that they think about accessibility and inclusion. Is there steps going into the place? Or are we gonna be having people writing down answers or doing a visual puzzle? Or do you have to listen to music, or is there a lot of conversation so that someone who's D/deaf or Hard of Hearing, they would need an interpreter, some things like that. So, it's not only the world of work itself. And it might be because I work at LinkedIn and all that stuff, I put a lot of stock in the relationships you build with people that you work with. And some of that happens in the out-of-office experiences that companies might put together.

LIZ: I think that's a really huge one for me, especially because I think speaking at conferences and participating at them was a big way for me into the field and into the career. And that it's just a very challenging environment to go to a whole new community of people who may not have thought at all about accessibility. So, I'll be speaking in a room like this or whatever, but the room would be jam-packed full of chairs with no aisle to the front, or the aisle would have all the AV equipment in the middle of the aisle. So, there would be a sudden flurry. Or then someone

would have to push me backwards up a ramp that's like a 45-degree angle, or I'd have to crawl onto the stage to speak. And those things just, you can deal with them, but it's so infuriating and so sort of, you know, just I think infuriating. But there's some shame involved as well. It's just like a giant mixture of feelings right when you wanna be at your best. So, a lot of those mobility and having travel lanes or accessible paths through a space, even at a party, those are important for events and in the field more than you might think.

JOSH: One of the things that tech companies can do is sort of make sure that in their recruiting and in their hiring practices, making sure that there are people with disabilities involved at every level of a company has an impact on how that company thinks about accessibility and the culture of accessibility that that company has. And so, I just wanna encourage thinking about hiring across the board, not just in these very difficult-to-fill technical positions, but thinking about making extra efforts to recruit people with disabilities. And as Jennison said, not to lower your standards but to broaden your reach.

JENNISON: Once you hire that person in at whatever level they're in, you also need to think of them as next talent as well. And so, making sure that the pathway and the next role and roles above are gonna be accessible and that they could be successful there too. 'Cause I think Josh and Liz, you'll agree that we need to have people with disabilities in the boardrooms. But if we're still dealing with technologies that are highly visual, for example, you're not gonna see blind people up in the boardrooms of major tech companies or other large corporations unless or until those types of instruments that are used for decision-making are themselves made to be accessible.

LIZ: Well, I know a quick route to that one. I'll just run over a few more people in my scooter. [chuckles] Recruit that way.

ALICE: That's a good plan!

Well, let's all give a round of applause to our awesome panelists.

HENRY: Let's give it up.

[applause]

ALICE: Yay! Yeah, give it up.

Wrapping up the panel, social media, and current projects

HENRY: Before we wrap up, any last mentions, plugs, any events you wanna mention along those lines?

ALICE: Yeah, your websites or Twitter handles.

JOSH: One of the things that I've done over the last several years that I think is the coolest and most fun for a lot of people is this video accessibility tool called YouDescribe, just like YouTube, but it's YouDescribe.org. It's basically a platform for anybody to add Audio Description annotation to any YouTube video to make it accessible for blind viewers. And so, it's totally free and pretty freeform. You can do very high-quality Audio Description if you have the skills to do that, or you can do lower-quality Audio Description if you don't. But either way, described video is almost always more accessible than undescribed video. And so, it's just kind of a neat platform for people to kinda get their heads thinking about what accessibility really means and

how we can use digital tools to distribute the load of making our world a little bit more accessible. YouDescribe.org.

LIZ: I think I already plugged my book, but…. [laughs]

JOSH: One more time!

LIZ: I have, I guess my Twitter handle is just @LizHenry. The book is from Cardboard House Press, and it's called *My Lai* by by Carmen Berenguer. Or you can tell me your Firefox bugs. That's great at parties.

JENNISON: [chuckles]

LIZ: Just tell me your Firefox problems, and I'll help you file a bug. It's really fun.

JENNISON: So, two things I'll quickly plug. One, I cofounded an event called Global Accessibility Awareness Day, which is on the third Thursday of May. We're gonna be in our seventh year next year. So, if you use your favorite search engine and look for Global Accessibility Awareness Day, you can pop up our website and learn about it and maybe host an event here at Pandora for it. The other thing is for folks here in the Bay Area who are interested in accessibility from the design or engineering side of things, I lead a Meetup group called Bay Area Accessibility and Inclusive Design, or A11yBay for short. So, you can come out and meet other designers and developers who may not be working in accessibility full-time but have a passion for it. So, we're up on Meetup, and it's A11yBay. My Twitter handle is @Jennison.

JOSH: My Twitter handle is @BerkeleyBlink.

ALICE: Thanks, Liz! Thanks, Jennison! Thanks, Josh!

JOSH: Thanks, Pandora!

ALICE: Thanks, Pandora! I'll see you guys later!

Wrap-up

[radio static, voices singing with hip-hop beat]

ALICE: This podcast is a production of the Disability Visibility Project, an online community dedicated to creating, sharing, and amplifying disability media and culture.

All episodes, including text transcripts, are available at DisabilityVisibilityProject.com/Podcast.

You can also find links about Liz, Jennison and Josh on our website.

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Thanks for listening, and see you on the Internets! Byeee!